

Name _____

Date _____

201 2.5 Extra Practice

State the reason why the following statements are true.

1. _____ If $AB = BC$, then $AB + OR = BC + OR$.
2. _____ If $AB = BC$, then $AB - OR = BC - OR$.
3. _____ If $5x - 7 = 23$, then $5x = 30$.
4. _____ If $y - 19 = 21$, then $y = 40$.
5. _____ If $7x = 91$, then $x = 13$.
6. _____ If $49 = 147x$, then $1/3 = x$.
7. _____ If $2x + 6 = x - 2$, then $x + 6 = -2$.
8. _____ If $m\angle A = 40$, then $3 \bullet m\angle A = 120$.
9. _____ If $m\angle A = m\angle B$ and $m\angle B = m\angle C$, then $m\angle A = m\angle C$.
10. _____ If $\frac{1}{2} WY = \frac{1}{2} RT$, and $RS = \frac{1}{2} RT$, and
 $WS = \frac{1}{2} (WY)$, then $WS = RS$.
11. _____ If $m\angle 2 = m\angle 1$, then $5 \bullet m\angle 2 = 5 \bullet m\angle 1$.
12. _____ If $AB = CD$, then $AB + BC = BC + CD$.
13. _____ If $m\angle 1 + m\angle 2 = 180$ and $m\angle 1 = m\angle 3$, then
 $m\angle 3 + m\angle 2 = 180$.
14. _____ If $m\angle 4 = m\angle 3$, and $m\angle 3 = m\angle 5$, and
 $m\angle 5 = m\angle 1$, then, $m\angle 4 = m\angle 1$.
15. _____ If $m\angle 5 + m\angle 6 = 90$ and $m\angle 6 = m\angle 3$, then
 $m\angle 5 + m\angle 3 = 90$.
16. _____ If $\frac{1}{2} AB = \frac{1}{2} CD$, and $EF = \frac{1}{2} AB$, then $EF = \frac{1}{2} CD$.
17. _____ If $m\angle ABC = m\angle 1$ and $m\angle 1 = m\angle GHK$, then
 $m\angle ABC = m\angle GHK$
18. _____ If $RS = DW$, then $DW = RS$
19. _____ $AC = AC$.
20. _____ $m\angle D = m\angle D$
21. _____ If $m\angle A = m\angle D$ and $m\angle D = m\angle E$, then $m\angle A = m\angle E$
22. _____ If $CE = BA$ and $BA = \frac{1}{2} (BD)$, then $CE = \frac{1}{2} (BD)$

Possible Reasons:
 Addition,
 Subtraction,
 Multiplication,
 Distributive,
 Reflexive,
 Symmetric,
 Transitive,
 Substitution,
 Division,
 Def. of midpoint,
 Def. of \angle bisector

23. _____ If $WR = PQ + 2ST$, then $PQ + 2ST = WR$.
24. _____ If $AB + BC = BC + CD$, and $AC = AB + BC$,
and $BD = BC + CD$, then $AC = BD$.
25. _____ If $m\angle 4 + m\angle 5 = 90$ and $m\angle 3 = m\angle 4$, then
 $m\angle 3 + m\angle 5 = 90$.
26. _____ If $80 = m\angle A$, then $m\angle A = 80$.
27. _____ If $RS = TU$, and $TU = YP$, then $RS = YP$.
28. _____ If $7x = 28$, then $x = 4$.
29. _____ If $VR + TY = EN + TY$, then $VR = EN$.
30. _____ If $m\angle 1 = 30$ and $m\angle 1 = m\angle 2$, then $m\angle 2 = 30$.
31. _____ If $m\angle 1 = m\angle 2$, then $m\angle 2 = m\angle 1$.
32. _____ If $m\angle 1 = 90$ and $m\angle 2 = m\angle 1$, then $m\angle 2 = 90$.
33. _____ If $AB = RS$ and $RS = WY$, then $AB = WY$.
34. _____ If $AB = CD$, then $\frac{1}{2} AB = \frac{1}{2} CD$.
35. _____ If $m\angle 1 + m\angle 2 = 110$ and $m\angle 2 = m\angle 3$,
then $m\angle 1 + m\angle 3 = 110$.
36. _____ $RS = RS$
37. _____ If $AB = RS$ and $TU = WY$, then $AB + TU = RS + WY$.
38. _____ If $m\angle 1 = m\angle 2$, and $m\angle 2 = m\angle 3$, then
 $m\angle 1 = m\angle 3$.

39. Complete the following proof:

<p>Given: $8x - 5 = 2x + 1$ Prove: $x = 1$</p>
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Statements	Reasons
1. $8x - 5 = 2x + 1$	1 _____
2. $-5 = -6x + 1$	2 _____
3. $-6 = -6x$	3 _____
4. $1 = x$	4 _____
5. $x = 1$	5 _____

40.

Complete the proof of the following algebraic equation:

$$\frac{2a-4}{3}=8.$$

Statements	Reasons
1. $\frac{2a - 4}{3} = 8$	1. Given
2. $3\left(\frac{2a - 4}{3}\right) = 3(8)$	2.
3. $2a - 4 = 24$	3.
4. $2a = 28$	4.
5. $a = 14$	5.

41. Given: $\frac{2}{3} + n = 9 - \frac{1}{4}n$

Prove: $n = \frac{20}{3}$

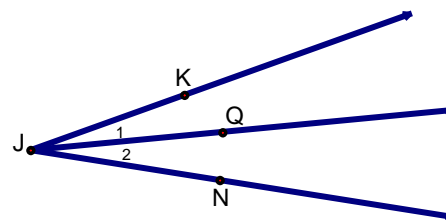
Statements	Reasons

State the conclusion that can be drawn from the given information. Give the reason for each conclusion.

42. Given: \overrightarrow{JQ} bisects $\angle KJN$.

Conclusion: _____ \cong _____

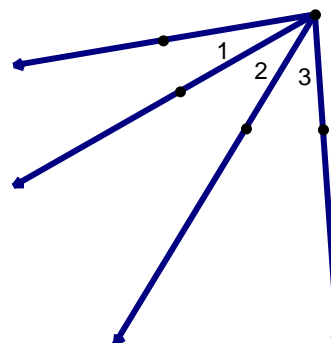
Reason: _____



43. Given: $m\angle 1 = m\angle 2$; $m\angle 2 = m\angle 3$

Conclusion: _____ = _____

Reason: _____



44. Given: M is the midpoint of \overline{AB} .

Conclusion: _____ = _____

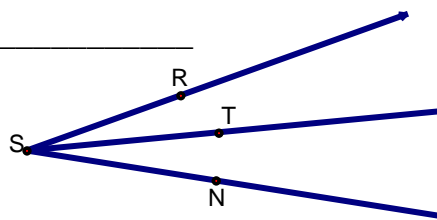
Reason: _____



45. Given: diagram

Conclusion: _____ + _____ = _____

Reason: Angle Addition Postulate



46. Given: Diagram

Conclusion: _____ + _____ = _____

Reason: Segment Addition Postulate



Complete the statement so that the given reason justifies it.

1. Reflexive: $m\angle B =$ _____

2. Symmetric: If $MN = 5$, then _____

3. Transitive: If $\overline{AB} \cong$ _____; $\overline{BC} \cong \overline{EF}$; then $\overline{AB} \cong \overline{EF}$

4. Multiplication: If $\frac{x}{5} = 2$, then $x =$ _____

5. Distributive: $2(x + y) =$ _____

6. Addition: If $2x - 3 = 10$, then $2x =$ _____

7. Substitution: If $2x + y = 70$, and $y =$ _____, then $2x + 3x = 70$.

8. Division: If $8x = 88$, then $x =$ _____

9. Subtraction: If $AB + RS = CD + RS$, then _____.

10. Reflexive: $\overline{XY} \cong$ _____